



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,412	11/19/2003	Julius Robson	NRT-0215US (16125IDS01U)	9671
21906 7590 12/24/2009 TROP, PRUNER & HU, P.C. 1616 S. VOSS ROAD, SUITE 750 HOUSTON, TX 77057-2631			EXAMINER  CHO, UN C	
			ART UNIT 2617	PAPER NUMBER
			MAIL DATE 12/24/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/718,412

**Applicant(s)**

ROBSON ET AL.

**Examiner**

UN C. CHO

**Art Unit**

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6, 33-35 and 39 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 7-15, 17, 18, 20-24, 26, 28-32, 36-38 and 40 is/are rejected.
- 7) ☐ Claim(s) 2, 5, 16, 19, 25 and 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Proficiency's Patent Drawing Review (PTO-544)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. In view of the Appeal Brief filed on 21 August 2009, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/George Eng/

Supervisory Patent Examiner, Art Unit 2617

***Claim Objections***

2. Claims 32, 33, 35 and 39 are objected to because of the following informalities:

Claim 32, line 4: "higher gain user equipments," should be replaced with --higher gain user equipments.--

Claim 33, line 11: "being the same for all user equipments of the network,," should be replaced with --being the same for all user equipments of the network.--

Claim 35, lines 10 and 11: "the measure, ,said fixed allocation of resource units – being the same for all user equipments of the network,," should be replaced with --the measure, said fixed allocation of resource units being the same for all user equipments of the network.--

Claim 39, lines 10 and 11: "said fixed allocation of resource units –being the same for all user equipments of the network,," should be replaced with --said fixed allocation of resource units being the same for all user equipments of the network;--

The examiner kindly suggests the applicant to carefully look through the claims for any other typographical errors.  
Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 12 – 15, 24, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (hereinafter APA) in view of Sato et al. (US 2003/0069042 A1).

Regarding claim 1, The admitted prior art clearly teaches establishing a number of resource units making up a fixed allocation of resource units (each partition generally has a **finite spectral resource**); allocating the fixed allocation of resource units to each child user equipment in the partition (the finite spectral resource of a partition is **shared equally** among all its child user equipments) (Page 1, line 20 through Page 2, line 6).

However, the APA does not specifically disclose that said fixed allocation of resource units being **same** for all user equipments. In an analogous art, Sato discloses a radio base station (Fig. 1, element 11) having directional antennas (Fig. 1, elements 21a – 21c) providing coverage to particular sectors (A – C) (Page 4, Paragraphs 0047 – 0050) and a controller 25 in the base station that controls the allocation of channels and particularly, as shown on Page 8 Table 6 each sector ((A, B and C), having mobile stations within (12a – 12c)) has a fixed allocation of **access channel (three (3) per sector)** to be used by the mobile terminals located at each sector. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique Sato to the system of the APA in order to prevent an overload status by evenly allocating channels and evenly distributing the processing load of each base band signal processing block in an radio base station.

Regarding claims 12, 13, 14, 15, 24, 37 and 38, the claims are interpreted and rejected for the same reason as set forth in claim 1.

5. Claims 3, 4, 7, 17, 18, 20, 26, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over the APA in view of Sato as applied to claim 1 above, and further in view of Ben-Eli (US 2004/0023660 A1, hereinafter Ben).

Regarding claim 3, the combination of the APA and Sato does not specifically disclose that the fixed allocation is a selected minimum number of resource units. In an analogous art, Ben teaches a scheduler selecting an appropriate amount of resources to be shared with users (Page 2, Paragraph 0015). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Ben to the modified system of the APA and Sato in order to efficiently optimize throughput on the network.

Regarding claim 4, Ben discloses wherein the spectral resource is made up of a number of frequency channels and each resource unit is a sub-set of the spectral resource smaller than a frequency channel (resources include power, codes, portion of the frequency, etc. Page 2, Paragraph 0015).

Regarding claim 7, Ben discloses wherein resource units which are not allocated in the fixed allocation of resource units to child user equipments remain unallocated to user equipments (a scheduler decides which resources are allocated to a user, thus it would have been obvious to one of ordinary skill in the art to recognize that unused resources will obviously remain unallocated to conserve network resources) (Page 2, Paragraph 0015).

Regarding claim 8, Ben discloses determining the gain of the radio link between the partition and each child user equipment (users may be ranked based on determined

signal quality); and allocating the remaining resource units among the child user equipments by prioritizing user equipments having a high gain link (users having a higher signal quality may be ranked higher than users having a lower signal quality and allocating resources accordingly (Page 2, Paragraph 0016).

Regarding claims 9, 21, 22, 30 and 31, the claims are interpreted and rejected for the same reason as set forth in claim 8.

Regarding claim 10, Ben discloses determining the gain of the radio link between the partition and each child user equipment of the partition (users may be ranked based on determined signal quality; Page 2, Paragraph 0016) and regulating the transmit power of each child user equipment according to the determined gain for that user equipment such that lower equipments transmit with higher power than higher gain user equipments (a scheduler decides which resources are allocated to a user for example, how much power, how many codes, what portion of the frequency and so on, thus it would have been obvious to one of ordinary skill in the art to recognize that the scheduler would obviously adjust the power so that lower equipments transmit with higher power than higher gain user equipments; Page 2, Paragraph 0015).

Regarding claims 11, 23 and 32, the claims are interpreted and rejected for the same reason as set forth in claim 10.

Regarding claims 17 and 28, the claims are interpreted and rejected for the same reason as set forth in claim 3.

Regarding claims 18 and 26, the claims are interpreted and rejected for the same reason as set forth in claim 4.

Regarding claims 20 and 29, the claims are interpreted and rejected for the same reason as set forth in claim 7.

Regarding claim 36, the combination of the APA and Sato discloses that said fixed allocation of resource units being the same for all user equipments of the network (*idem*). However, the combination of the APA and Sato does not specifically disclose discarding resource units allocated to child user equipments in a fixed allocation so as to determine remaining resource units; determining the gain of the radio link between the partition and each child user equipment; and allocating the remaining resource units among the child user equipments by prioritizing user equipments having a high gain link. In an analogous art, Ben discloses a scheduler deciding which resources are allocated to a user, thus it would have been obvious to one of ordinary skill in the art to recognize that unused resources will obviously remain unallocated in order to conserve network resources (Page 2, Paragraph 0015), moreover, Ben discloses determining the gain of the radio link between the partition and each child user equipment (users may be ranked based on determined signal quality); and allocating the remaining resource units among the child user equipments by prioritizing user equipments having a high gain link (users having a higher signal quality may be ranked higher than users having a lower signal quality and allocating resources accordingly (Page 2, Paragraph 0016).

Regarding claim 40, the combination of the APA, Sato and Ben discloses all the limitations as shown above in claims 3 and 36.



***Allowable Subject Matter***

6. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 2, the APA, Sato and Ben either alone or in combination fails to teach determining a measure of a maximum likely number of chilled user equipments per partition of the network; calculating the fixed allocation of resource units based on the ratio of a number of resource units in the partition per unit time to the measure.

Regarding claims 16 and 25, the claims are interpreted and objected for the same reason as set forth in claim 2.

Claims 2, 16 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 6 is allowed.

Please refer to the office action mailed on 1/3/2008 for the statement of reasons for the indication of allowable subject matter.

Claims 33 – 35 and 39 are allowed.

Regarding claims 33 – 35, the APA, Sato and Ben either alone or in combination fails to teach determining a measure of a maximum likely number of child user equipments per partition of the network; and determining the fixed allocation of resource units, said fixed allocation of resource units being same for all user equipments of the network, based on the ratio of a number of resource units in the link per unit time to the measure.

Regarding claim 39, the APA, Sato and Ben either alone or in combination fails to teach determining a measure of a maximum likely number of child user equipments per partition of the network; calculating a fixed allocation of resource units based on the ratio of a number of resource units in the partition per unit time to the measure, said fixed allocation of resource units being the same for all user equipments of the network; and allocating the fixed allocation of resource units to each child user equipment in the partition.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to UN C. CHO whose telephone number is (571)272-7919. The examiner can normally be reached on 9:00AM - 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Eng/  
Supervisory Patent Examiner, Art Unit 2617

/UN C. CHO/  
Examiner, Art Unit 2617